

Remarks

Claims 1, 4, 7, 40, 41 and 46-50 are pending in the subject application. By this Amendment, Applicants have amended claims 1, 4, 7, 40, 41 and 46-50. Support for the amendments can be found throughout the subject specification and in the claims as originally filed. Entry and consideration of the amendments presented herein is respectfully requested. Accordingly, claims 1, 4, 7, 40, 41 and 46-50 are currently before the Examiner. Favorable consideration of the pending claims is respectfully requested.

Applicants gratefully acknowledge the Examiner's withdrawal of the rejections under 35 U.S.C. § 101.

Claims 4, 46 and 47 are rejected under 35 U.S.C. § 112, second paragraph, as indefinite. The Office Action indicates that the claims are drawn to a production; however, the last step of claims 4, 46 and 47 include the active process steps of executing and outputting. Applicants respectfully assert that the claims as filed are definite. However, by this Amendment, Applicants have amended the claims to remove active processing steps. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, second paragraph, is respectfully requested.

Claims 4, 46, and 47 are rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter (*e.g.*, there is no physical transformation of matter outside of a computer). The Office Action indicates that the claims are drawn to a product that embodies a process involving the judicial exception of a computational algorithm. Applicants respectfully assert that the claims are not directed to non-statutory subject matter. However, by this Amendment, the claims have been amended to indicate that the claimed systems contain instructions for outputting the results obtained by the previously performed sets of instructions. With respect to useful, tangible and concrete final results, Applicants again submit that the information communicated to the user of the system allows for the identification of single nucleotide polymorphisms and the association of such polymorphisms with diseases or disorders. Thus, it is respectfully submitted that the claimed inventions correspond to statutory subject matter and reconsideration and withdrawal of the rejection under 35 U.S.C. § 101 is respectfully requested.

Claims 1, 4, 7, 40, 41 and 46-50 are rejected under 35 U.S.C. § 103(a) as obvious over Stanton, Jr. (U.S. Published Application No. 2002/0039990) in view of Kidd *et al.* (1998) and in

view of Jeffreys (U.S. Patent No. 5,811,235). The Office Action states that Kidd *et al.* teach a method of determining the haplotype frequencies of a population which include obtaining haplotypes for all individuals in each of two groups of individuals by genotyping the same gene which is located on the same chromosomal segment; randomly permuting the haplotypes between groups to determine the probability that the groups do not come from the same distribution of haplotypes; and assessing the statistical significance of individual haplotypes using a P-excess value. Jeffreys is cited as teaching a method of characterizing genomic DNA which includes providing binary codes for an allele or a haplotype and using that code to generate an array. Applicants respectfully assert that the claimed invention is not obvious over the cited reference.

Applicants respectfully traverse and submit that the combination of references does not teach various limitations of the subject claims. For example, the cited combination of references fails to teach coding all haplotypes and grouping identical genotypes prior to performing haplotype frequency estimations. As the Patent Office is aware, all the claim limitations must be taught or suggested by the prior art in order to establish the *prima facie* obviousness of a claimed invention (*CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) citing *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974)). Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested as the cited combination of references fails to render the presently claimed invention obvious.

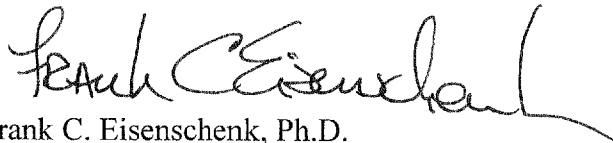
Applicants expressly reserve the right to pursue the invention(s) disclosed in the subject application, including any subject matter canceled or not pursued during prosecution of the subject application, in a related application.

Applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

Applicants invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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